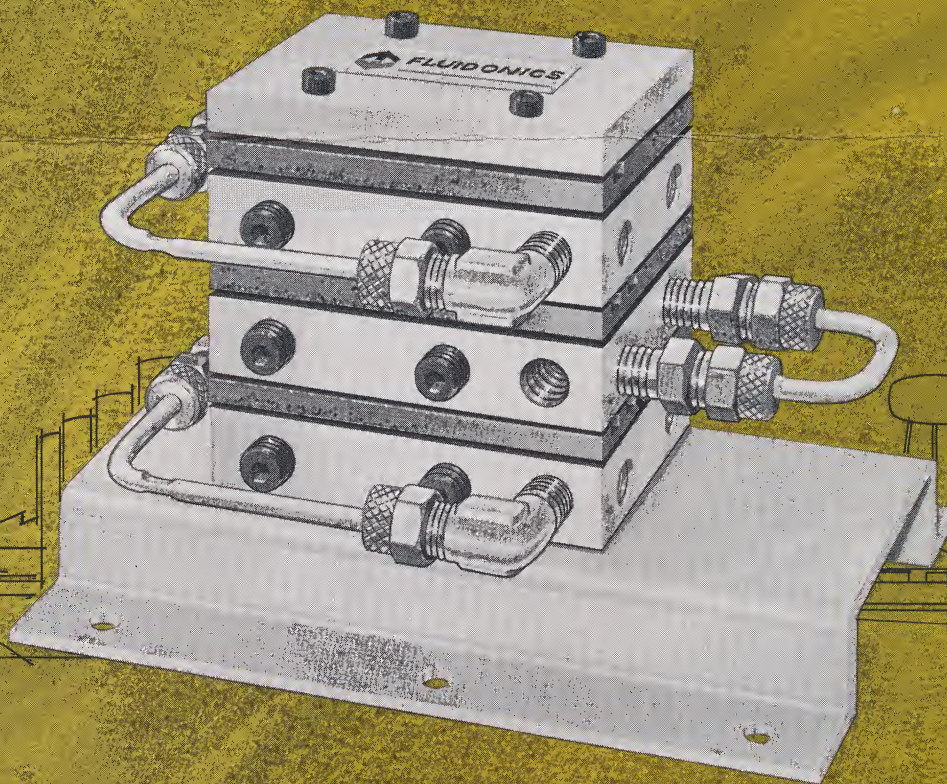




FLUIDONICS®

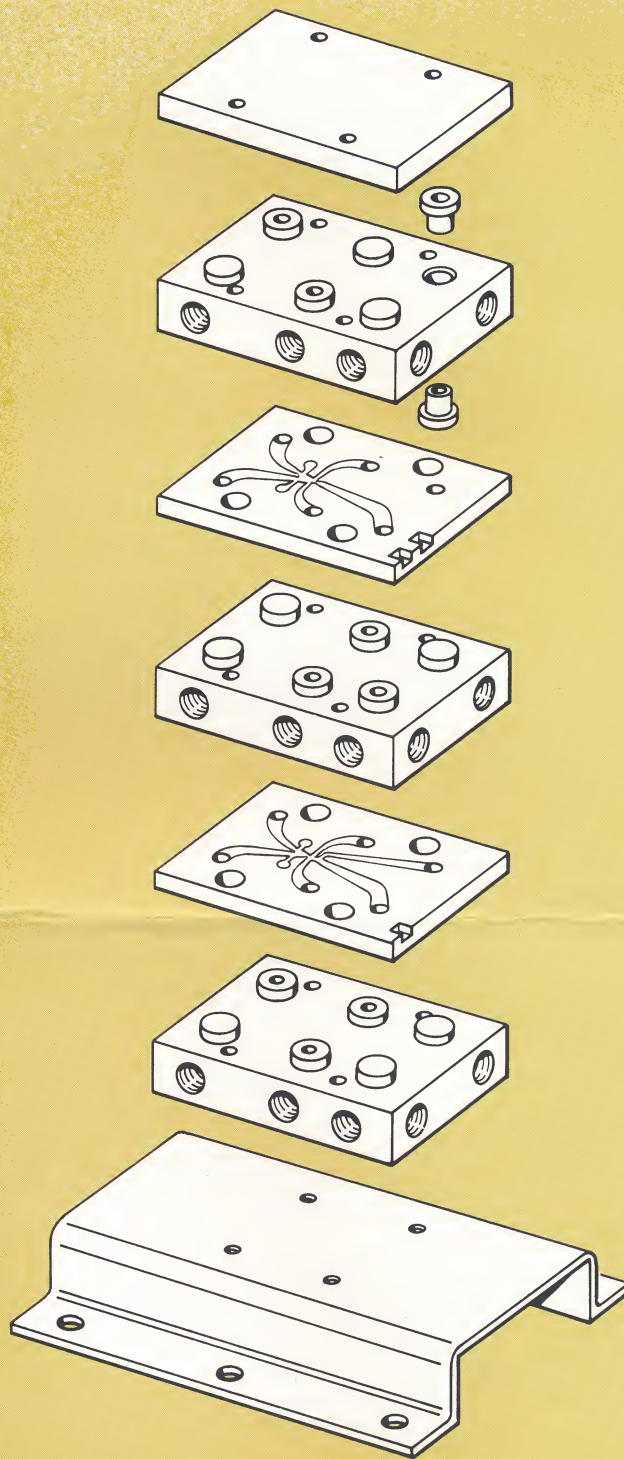


FLUIDIC DEVICES THAT • SENSE • AMPLIFY • SWITCH • DRIVE
FOR CIRCUITS THAT • COUNT • COMPUTE • TIME • STORE • HANDLE INFORMATION
TO BUILD FLUIDIC SYSTEMS WHICH SENSE AND CONTROL

ONCE A LABORATORY CURIOSITY
... NOW A REALITY IN CONTROL
ENGINEERING TECHNOLOGY

FLUIDICS + FLUIDONICS = A FLUID POWER CONTROL SYSTEM WITH THESE FEATURES

- Extended reliability through elimination of moving parts
- Control application possibilities where previously no controls were available
- Faster response time compared to conventional pneumatic, hydraulic and electro-mechanical controls
- Outstanding ambient environmental tolerance
- Indifference to nuclear and electro-magnetic radiation
- Resistant to most corrosive liquids and gases
- Elimination of hazards in areas where explosive gases, liquids and solids are processed and handled
- Lower cost control systems compared to explosion-proofing controls for work in hazardous areas
- Economical replacement of conventional control systems through low installation costs and ease of interfacing with standard electronic, electro-mechanical, pneumatic, hydraulic and mechanical control devices
- Reduction of down time and maintenance costs because there is virtually no maintenance other than periodic purging
- Elimination of high control device replacement costs, especially in processes where water, steam or radiation play havoc on electrical and electronic control components
- Highly specialized technical skills are not required for ordinary installation and maintenance
- Immediate off-the-shelf deliveries of packaged fluidic circuits, devices and component circuit accessories

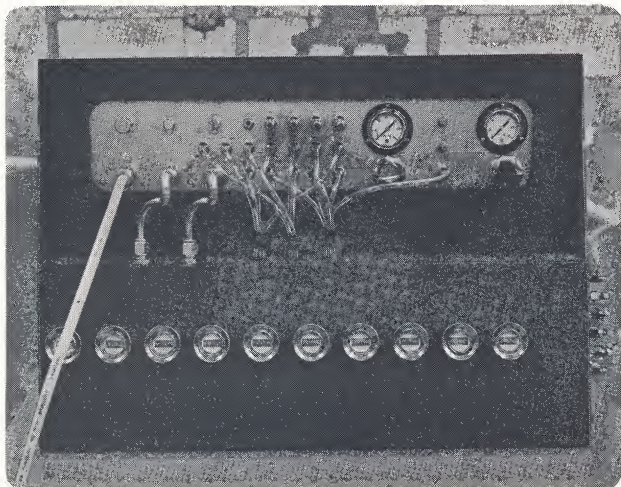


FLUIDI-STAK® control systems are designed for mass production flexibility. They offer the advantages of size reduction and compactness in functional packages, ease of circuit connection and provide a means for making a test circuit which can be machine mounted immediately.

Changes in control systems are easily accommodated. The FLUIDI-STAK is easily converted to meet new control requirements with off-the-shelf circuit blocks, manifolds and accessories.

APPLICATIONS FOR EVERY INDUSTRY

Two diversified fluidic applications below illustrate unlimited possibilities . . .



FLUID LOGIC TURBINE SEQUENCE CONTROL SYSTEM

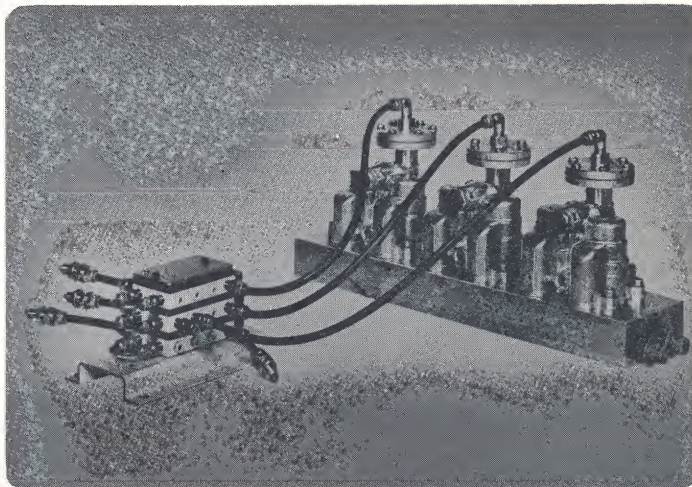
The Fluidic control system for Gas Turbine operation shown above, controls start-up, shut-down and malfunction of the gas turbine. The controller handles auxiliary functions for standard as well as non-standard events, performing shut-down logic when other than normal operations are announced by the sensing system.

Control system supply is natural gas from the downstream side of the gas turbine. All hazardous electrical inputs are eliminated to provide a safer more reliable control system.

Manual operation initiates normal starting and shut-down of the turbine.

Visual indicators show the condition of each parameter being sensed on the engine. Green indicates within limits and red indicates out of limits. In addition to visual indications, these devices transmit appropriate signals to the logic network to shut down all turbine operations until the malfunction is eliminated.

Fluidic control system supply is divided into primary and secondary lines which are pressurized during a starting sequence. Interruption of the secondary occurs when the running mode has been achieved. Completion of the stop sequence (normal or malfunction) interrupts supply to the entire system.



MILK CARTON CORNERING CONTROL

The fluidic system shown above replaces electrical limit switches and solenoid valves which were subjected to repeated and almost daily failures. Multiple orifice back pressure sensing provides two ANDing functions and an OR function which converts a continuous flow of milk cartons down a single line conveyor into an intermittent flow of four milk cartons abreast toward a casing machine.

Cartons ride powered, single-line, infeed conveyors until they reach dead plates where one by one they are shoved onto the plate by the arrival of cartons immediately behind them. As the dead plate is filled, the first carton in the line is pressed against a proximity sensor causing a hydraulic cylinder to extend and push four milk cartons onto a dual-line conveyor. An interlock prevents the cartons from staggering more than $\frac{1}{2}$ -inch as they travel. Similar action is performed on cartons traveling down the dual-line conveyor, pressing the cartons closely together, causing a cylinder to retract a rake which drags the cartons onto a four-line conveyor where they travel four abreast toward a casing machine.

Steam cleaning in many food processing plants creates an environment detrimental to electronic controls. It is under adverse conditions such as this that fluidics can and does provide a more economical, more reliable method of control.

FLUIDIC CIRCUITS, DEVICES AND CIRCUIT ACCESSORIES AVAILABLE FROM STOCK

Fluidic circuits provide proportional and digital amplification. There are devices and circuits that convert analogous pressure to digital pressure pulses, perform flip-flop switching and logic OR, NOR, AND and NAND functions. Operations such as addition, multiplication and equation-solving are also performed.

Other components available in the fluidic family are circuit accessories; capacitors, settable resistors, P.V.C. and Poly-Flo® tubing, fittings, special needle valves, standard manifolds, grommets and mounting brackets.

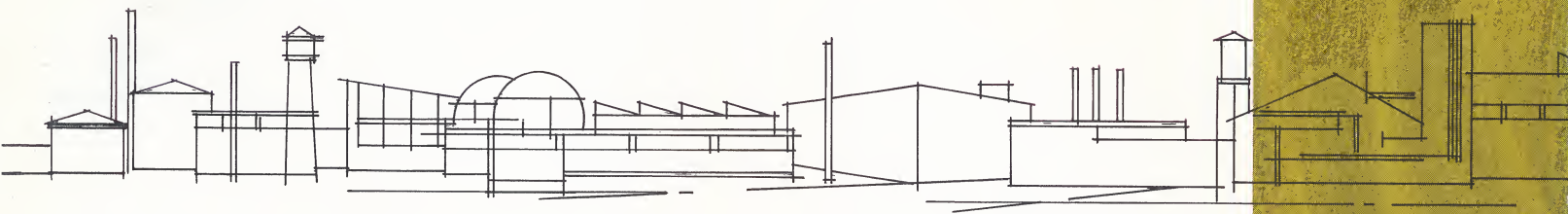
FLUIDONICS®

With hard-core technical insight in fluidic technology, Fluidonics devotes itself exclusively to the development and application of fluidic technology in manufacturing and marketing of fluidic devices and fluidic control systems for industry and government. Employing a growing staff of scientists, engineers and technicians as its nucleus, Fluidonics is a completely integrated research and development, design, manufacturing and marketing organization.

HOW FLUIDONICS CAN HELP YOU...

- Fluidonics offers the following services and products that can save your company their cost many times over:
- *Technical Services*—Project design, project studies, and experienced help in designing controls for your engineers to build.
- *Products*—Fluidic amplifiers, fluidic circuit accessories, functional control packages and complete packaged control systems ready for machine mounting.
- *An Expanding Distributor Network*—A distribution system comprised of distributors thoroughly versed in fluidic applications. This is an expanding network which can help market products you may have for this new technology.
- *Special Functional Packages*—Fluidonics provides the ability to manufacture functional packages for special requirements in small or large quantities.
- *Engineering and Research Availability*—Our staff is ready to provide complete engineering and research for special funded projects.
- *Field Service*—Problems in existing fluidic controls can be solved in the field by our service technicians at reasonable charges.

Write today for quotation on prototypes or production. Fluidonics can follow through with low-cost control system production in any quantity.



FLUIDONICS®

6300 West Howard Street • Chicago, Illinois 60648

ANOTHER DYNAMIC DIVISION OF  IMPERIAL-EASTMAN CORP.

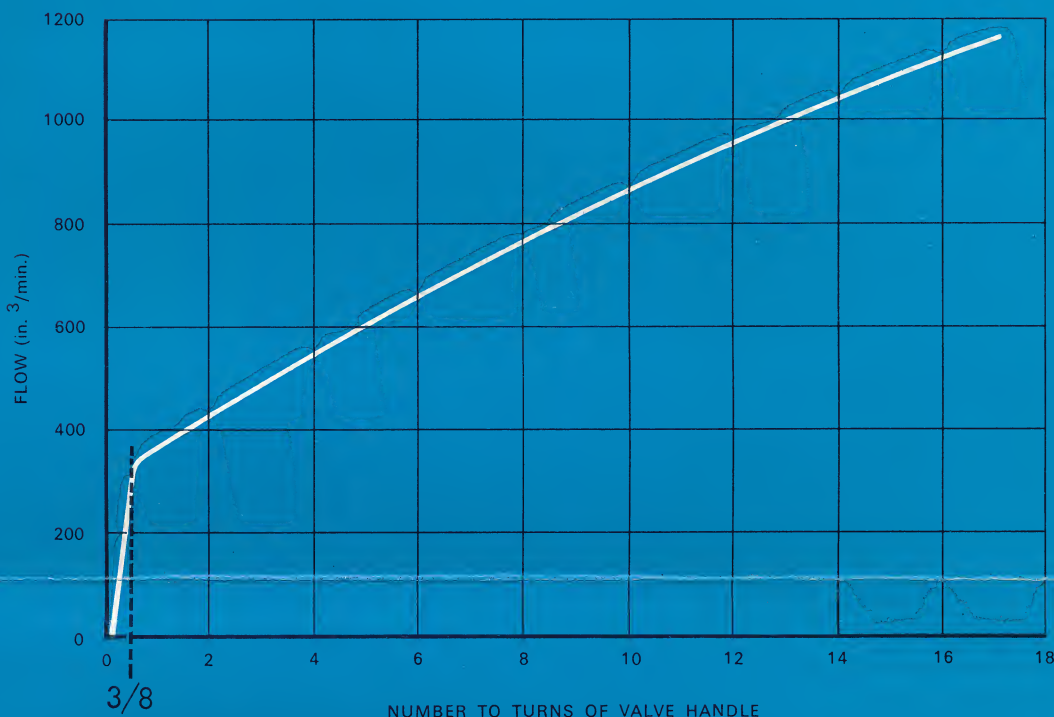
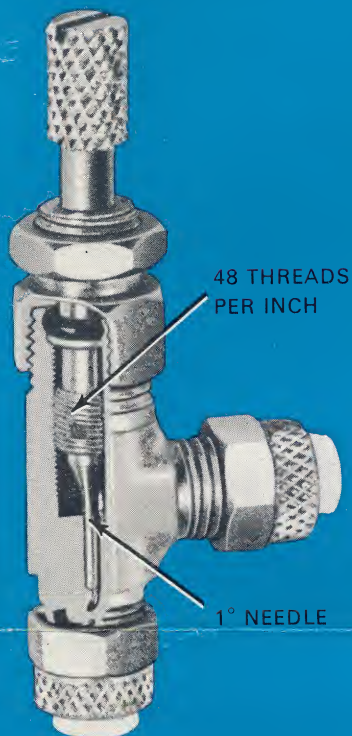
NEW

FROM



FLUIDONICS®

1° NEEDLE VALVE



Flow vs. Number of turns of valve handle, with 10 psig maintained inlet pressure—for 1° Metering Valve.

Fluidonics adds to their line of products a new panel mount needle valve to accurately control pressure/flow.

The 1° needle and a stem, that has 48 threads per inch, allows extremely close metering (see turns/flow chart above).

Jam nuts, common on most valves of this type, have been replaced by two (2) nylon locking pellets to secure valve setting. Once the valve is set, it stays set.

¼" Poly-Flo (R) fittings and a non-slip knurled knob puts this valve at the top in quality . . . yet the price is lower than any comparable valve on the market today!

CATALOG NO. 300039

LIST: \$6.20

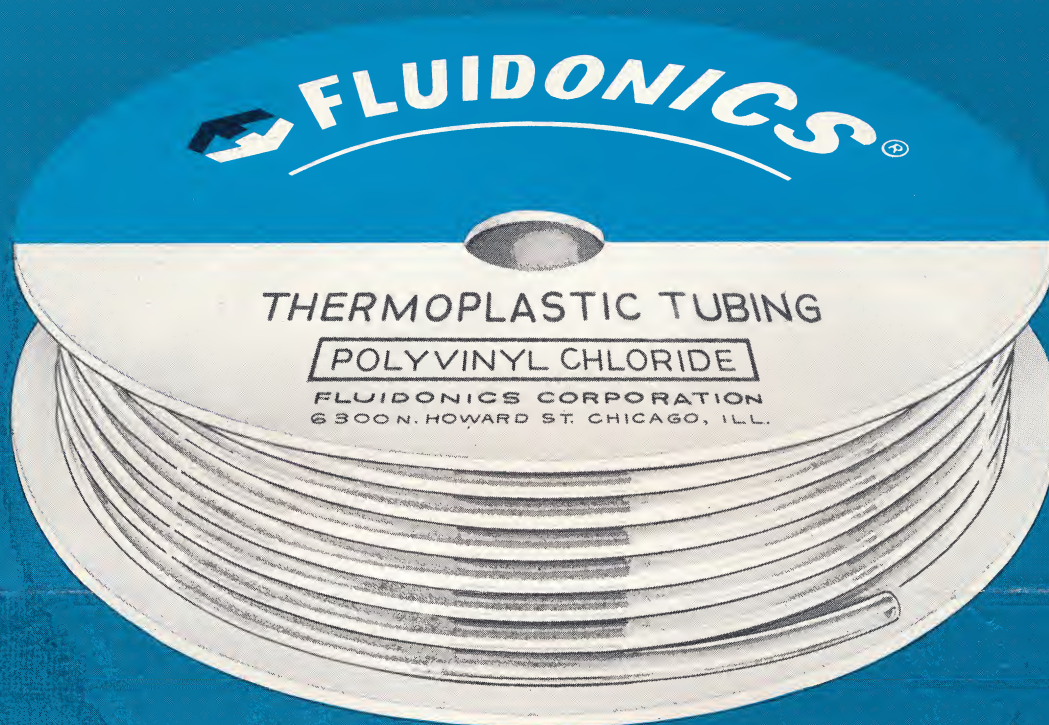
NEW

FROM



FLUIDONICS®

POLYVINYLCHLORIDE TUBING



Fluidonics adds a new dimension P.V.C. Tubing to their line of products. This new $\frac{1}{4}$ " o.d. clear polyvinylchloride (P.V.C.) tubing has a special wall thickness that allows it to be used with either barbed fittings or Poly-Flo® fittings.

Available in a clear $\frac{1}{4}$ " size only, the tubing comes on 250' reels, at the lowest price offered by any manufacturer today.

Originally designed for fluidic application this tubing should find a thousand other uses.

CATALOG NO. 44PVC

LIST: \$13.75 (250' COILS)

ORDER FROM:



Division of Imperial-Eastman Corporation

6300 W. Howard Street • Chicago, Illinois 60648

WHERE NEW THINGS HAPPEN EVERY DAY!